

numerous letters from prospective emigrants who desire to go into the fruit business, and he secured several situations for young men who had some capital, and who desired to learn the fruit business before investing on their own account. Many stated that they were not afraid of hard work, and he gave them all a most cordial welcome to our country.

### Cider, Vinegar and Sugar from Sugar Beets.

We have recently received several inquiries on the above subject, especially from farmers who complain that the times are so hard that they must change their system or become bankrupt. This question is not in our line of journalism, but from all the inquiries we have made, we have not been able to see our way clearly in recommending farmers to make undertakings of this kind, our policy rather being to show them how to make profits in those branches in which they are already engaged. We have received the following communication from Mr. Andrew H. Ward, of Boston, Mass. His statements may be correct, but we are not sufficiently posted in the business to endorse them; we therefore ask the farmers to run the risk and form their own judgment. We should like to receive reports from all who try the experiment; we know however, that the pulp makes excellent food:

Sugar beets are a crop very easily raised, and in good soil the produce is abundant. All cattle are fond of the leaves, which add much to the milk of cows, without giving it that bad taste which is unavoidable when they are fed with turnips or cabbages, and which is chiefly owing to the greater rapidity with which the latter undergo the putrefactive fermentation.

The seed is sown in drills 20 to 24 inches apart, and thinned out to the distance of 8 to 12 inches from plant to plant in the rows. From four to six pounds of seed are required per acre, and they should be steeped 48 hours before planting; the best depth for sowing is from three-fourths of an inch to an inch; the culture is similar to that of carrots or parsnips, and the cost for seed, labor and fertilizers will amount to about \$40 per acre.

The yield, according to the quality of the land fertilizer used and the cultivation bestowed, should average not less than 27½ tons or 908½ bushels beets per acre, and 5½ tons beet leaves.

Analysis shows that 1000 pounds of sugar beets contains 184 pounds dry substances, 1.60 nitrogen, 7.10 ashes, 3.914 potash, 0.379 lime, 0.536 magnesia, 0.780 phosphoric acid. In manufacturing, these elements are distributed as follows:—

	d. s.	nit.	ashes.	pot.	lime.	mag.	p. acid
T's & B's.....	19	0.24	1.15	0.336	0.108	0.132	0.144
Fibre.....	46	0.44	1.71	0.585	0.390	0.100	5.165
Refuse.....	24	0.60	1.20	0.380	8.640	0.250	0.380
Molasses.....	25	0.31	2.47	1.741	0.141	0.009	0.015
Sugar.....	85	—	0.57	0.872	—	0.040	0.072

After harvesting, the roots are first topped, then washed and pulped in a grater, and pressed to extract juice.

Fifty pounds pressure to the square inch extracts 60 percent of juice, 80 pounds pressure to the square inch extracts 64 percent of juice, 400 pounds pressure to the square inch extracts 75 percent of juice.

Twenty-four pounds of pulp for every 100 square inches of press surface, is the best proportion to use. The cider press and grater, made by the Boomer and Boschert Press Co., of Syracuse, N. Y., is worked by power, and has a capacity with the labor of two men of grating and pressing one thousand bushels of beets per day of 10 hours, and yields 5000 gallons of juice.

The press and grater cost \$510, and require less than six horse power to run them, and the press is the best and cheapest there is for this use. The ordinary cider press will answer, but it costs more to run it, and not as much juice is obtained on account of its not being able to produce as much pressure as the other.

One bushel of sugar beets, mixed with nine bushels of apples, makes a cider richer and of superior flavor to that made from apples alone. Sugar beet juice can be converted into vinegar in

the same manner cider now is; it makes a stronger vinegar than cider does, of equally good but different flavor, and if treated the same as maple sap or sorghum juice, it will yield a good article of brown sugar, and all of this not used by the producer in the brown state, would be readily purchased to be refined by the refineries already established. To refine sugar requires costly machinery, such as vacuum pans, centrifugal machines, filters of bone, coal, &c., and also skilled labor, but the manufacture of sugar from beet juice requires only the evaporating pan and the addition of some lime to the juice to neutralize the acid.

The best pan is that made by the Blymyer Manufacturing Co., Cincinnati, Ohio. 4 x 15 feet of copper costs \$210, has a capacity to evaporate 4000 gallons per day of 24 hours, and requires three cords of wood or its equivalent in coal. They also have larger and smaller pans, both iron and copper, the former being lower in price. I have no personal interest in presses or pans, and mention them, that each, for himself, can make an estimate of the cost of the machinery required, and what it will cost to convert his beets into cider, vinegar or sugar.

The estimated quantity of the sugar supply of the commercial world in 1875 was 2,140,000 tons of cane sugar and 1,317,625 tons of beet root sugar, of which latter France produced 462,256 tons as against 1,565 tons produced in 1828, which shows the progress of this industry there. The consumption of sugar in the United States is about 700,000 tons, and is rapidly increasing. We now produce of cane sugar 100,000 tons, and of beet sugar 1,000 tons, and there is no reason why this cannot be increased to the quantity we require, if the farmers will raise the beets.

In France there is a heavy tax on the beet root sugar they produce, and cane sugar is admitted free, yet, notwithstanding these disadvantages, they successfully compete with it; here the reverse is the case—a heavy duty on sugar imported and no taxes levied on its manufacture; certainly under these conditions we should produce all the sugar we consume, and have a surplus for export.

After the juice is expressed from the rasped beet, the dry pulp remaining is an admirable food for cattle, sheep and swine. The average amount of pulp is 20 percent of the original weight of the beet, and three tons of it for feeding purposes are equal to one ton of hay, and should be fed in connection with straw and oil cake or cotton seed meal. As the pulp is fed back to stock, the land is constantly growing richer, all the mineral substances taken from it being restored in the manure; this enables the farmer to raise larger crops of various produce, and consequently keep more stock, which enables him to make more butter and cheese.

The present cider mills and cheese factories could add to their present machinery the pans or presses as required, and by co-operation on this, as in other products, we can produce profitably all the sugar we require. This will bring the business of sugar making within the reach of small farmers, and is of vast importance.

The notion prevails that to make sugar profitably it must be made extensively. This is certainly erroneous, and the sooner the illusion is dispelled the sooner we shall begin to realize the productive resources of our lands and employ our now idle laborers on a very remunerative crop now grown only to a limited extent. The introduction of the cultivation of the sugar beet generally, subsequently to be converted into sugar or vinegar, would be of great benefit to farmers. It would insure to them superior methods of agriculture, increased crops, more remunerative prices, and enhanced value of farms.

It would create industry and diversity of labor, thereby increasing the general prosperity, intelligence and happiness of the community.

It would eventually reduce the prices of sugar, of bread, and of meat, butter and cheese, and render us more independent of foreign countries. One acre of land will produce 1000 bushels of sugar beet, which made into sugar, will yield 4,800 pounds sugar; or into vinegar, 5000 gallons, or into proof spirits, 1000 gallons; they are profitable to feed to cattle, particularly to milch cows, in connection with hay, and the pail acquaints the farmer with the fact.

### Another Leading Township Agricultural Society.

To the Editor of the Advocate:

DEAR SIR,—I noticed a short article in the February number of your journal on Township Agricultural Societies, and was thereby reminded that I intended to have written to you on this subject for several months back. Since the advent of the Toronto Exhibition, which is, I believe, to a great extent self-supporting, the question has frequently been discussed—Should not all exhibitions be self-supporting? And therefore if they cannot subsist without government support, they must be a loss to the community at large, and we are better without them. The original intention of the government grant was to give an impetus to these institutions when the country was sparsely settled and the farmers were poor, and the science of agriculture was almost an unknown quantity. These conditions have all but passed away; the country is wealthy and enlightened, and I think it high time to drop the government apron-string, when the result would be the survival of the fittest, for anything that requires a prop to uphold it is leaning on a broken reed, and is sure to fall at last.

We have here in Erin Township, Wellington Co., a Society which has been in existence for over thirty years, and has now grown into monstrous proportions, the attendance at the last annual show being over 10,000 people, and yet I sometimes wonder if it does not do more harm than good. True, the Society, in addition to paying nearly one thousand dollars in prizes annually, has paid for a tract of ten acres, with commodious buildings and other surroundings. The entries are numerous, and many of the articles exhibited are of a superior description, as instance potatoes, which were exhibited here and at Guelph, and went thence to the Colonial Exhibition. But despite this fact, the people do not appear to take the same genuine interest in the show for its own sake that they did when there were not so many outside attractions. This Society has for a number of years encouraged itinerant shows of every description, admitting them within the grounds at a nominal license, until now it is something like the old story, instead of the head the whole body has got in and nearly crowded the Society out. In other words, the thing has become a nuisance, and the place a perfect bedlam, and fairly swarms with pick-pockets, gamblers, and all that is evil and demoralizing to young and old. At the last annual show it was even complained that the implements, vehicles, etc., on exhibition had to take a retired portion of the ground in order to make way for Punch and Judy shows and other brawlers of a like ilk, because, forsooth, they paid a license. This is a crying evil and I would be glad to have your views thereon, as also on the subject at length, as I have only in this letter given it a hurried notice. Yours, etc.,

Hillsburg, Feb. 8th, 1887. A READER.

The *American Cultivator* says the difference between old and new process linseed meal at present is that the new process meal contains about 2½ percent less of oil. The new process, some years ago, contained ten percent of oil, when pressed in thick cakes, but of late it is pressed in very thin cakes, and with the perfection of machinery they press out all but four or five percent of oil. This is all the practical difference between them, and they may be considered, practically, of the same value; the difference in the value of the oil would not, under any circumstances, amount to more than six or eight cents per 100 pounds.

At a recent meeting of the Penobscot farmers' club, Mr. Elijah Comins said: "I would recommend that stock be kept off the mowing field all seasons of the year. When we practiced feeding our mowing fields we cut from thirty to forty tons of hay a year; now we cut from seventy to eighty tons, and it is due to a great extent to not fall feeding our mowing fields."